9/12   #8

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RAW SEQUENCE LISTING   DATE: 09/17/2002
PATENT APPLICATION: US/10/005,228   TIME: 13:30:41

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 3 <110> APPLICANT: Lyons, Karen M
 5 <120> TITLE OF INVENTION: Method and Composition for Modulating Bone Growth
 7 <130> FILE REFERENCE: 22058-554
 9 <140> CURRENT APPLICATION NUMBER: 10/005,228
10 <141> CURRENT FILING DATE: 2001-12-03
12 <150> PRIOR APPLICATION NUMBER: 60/250,535
13 <151> PRIOR FILING DATE: 2000-12-01
15 <160> NUMBER OF SEQ ID NOS: 9
17 <170> SOFTWARE: PatentIn Ver. 2.1
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20 <211> LENGTH: 2952
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22 <213> ORGANISM: Homo sapiens
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27 ccttcccccc tcgccctcat gaatagctgg gactacagcc tggagcattg gtaagcgtca 180
28 cactgccaaa gtgagagctg ctggagaact cataatccca ggaacgcctc ttctactctc 240
29 cgagtacccc agtgaccaga gtgagagaag ctctgaacga gggcacgcgg cttgaaggac 300
30 tgtgggcaga tgtgaccaag agcctgcatt aagttgtaca atggtagatg gagtgatgat 360
31 tcttcctgtg cttatcatga ttgctctccc ctcccctagt atggaagatg agaagcccaa 420
32 ggtcaacccc aaactctaca tgtgtgtgtg tgaaggtctc tcctgcggta atgaggacca 480
33 ctgtgaaggc cagcagtgct tttcctcact gagcatcaac gatggcttcc acgtctacca 540
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35 tggccaagct gtggagtgct gccaagggga ctggtgtaac aggaacatca cggcccagct 660
36 gcccactaaa ggaaaatcct ccctggaac acagaatttc cacttggagg ttggcctcat 720
37 tattctctct gtagtgttcg cagtatgtct tttagcctgc ctgctgggag ttgctctccg 780
38 aaaatttaaa aggcgcaacc aagaacgcct caatccccga gacgtggagt atggcactat 840
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51 tggacttgtt ttgtgggaag tggccaggcg gatggtgagc aatggtatag tggaggatta 1620
52 caagccaccg ttctacgatg tggttcccaa tgacccaagt tttgaagata tgaggaaggt 1680
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61 aaaagagatc tgggcattaa gtcagtggct ttgcatagct ttcacaagtc tcctagacac 2220
62 tccccacggg aaactcaagg aggtggtgaa tttttaatca gcaatattgc ctgtgcttct 2280
63 cttctttatt gcactaggaa ttctttgcat tccttacttg cactgttact cttaatttta 2340
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72 gaaaatgcat tttcttcaga attatccatt acgtgcattt aaactctgcc agaaaaaaat 2880
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87              20                  25                  30
89 Tyr Met Cys Val Cys Glu Gly Leu Ser Cys Gly Asn Glu Asp His Cys
90          35                  40                  45
92 Glu Gly Gln Gln Cys Phe Ser Ser Leu Ser Ile Asn Asp Gly Phe His
93      50                  55                  60
95 Val Tyr Gln Lys Gly Cys Phe Gln Val Tyr Glu Gln Gly Lys Met Thr
96  65                  70                  75                  80
98 Cys Lys Thr Pro Pro Ser Pro Gly Gln Ala Val Glu Cys Cys Gln Gly
99              85                  90                  95
101 Asp Trp Cys Asn Arg Asn Ile Thr Ala Gln Leu Pro Thr Lys Gly Lys
102             100                 105                 110
104 Ser Phe Pro Gly Thr Gln Asn Phe His Leu Glu Val Gly Leu Ile Ile
105         115                 120                 125
107 Leu Ser Val Val Phe Ala Val Cys Leu Leu Ala Cys Leu Leu Gly Val
108         130                 135                 140
110 Ala Leu Arg Lys Phe Lys Arg Arg Asn Gln Glu Arg Leu Asn Pro Arg
111 145                 150                 155                 160
113 Asp Val Glu Tyr Gly Thr Ile Glu Gly Leu Ile Thr Thr Asn Val Gly
114                 165                 170                 175
116 Asp Ser Thr Leu Ala Asp Leu Leu Asp His Ser Cys Thr Ser Gly Ser
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122 Thr Leu Leu Glu Cys Val Gly Lys Gly Arg Tyr Gly Glu Val Trp Arg
123      210               215               220
125 Gly Ser Trp Gln Gly Glu Asn Val Ala Val Lys Ile Phe Ser Ser Arg
126 225              230               235               240
128 Asp Glu Lys Ser Trp Phe Arg Glu Thr Glu Leu Tyr Asn Thr Val Met
129              245               250               255
131 Leu Arg His Glu Asn Ile Leu Gly Phe Ile Ala Ser Asp Met Thr Ser
132          260               265               270
134 Arg His Ser Ser Thr Gln Leu Trp Leu Ile Thr His Tyr His Glu Met
135          275               280               285
137 Gly Ser Leu Tyr Asp Tyr Leu Gln Leu Thr Thr Leu Asp Thr Val Ser
138      290               295               300
140 Cys Leu Arg Ile Val Leu Ser Ile Ala Ser Gly Leu Ala His Leu His
141 305              310               315               320
143 Ile Glu Ile Phe Gly Thr Gln Gly Lys Pro Ala Ile Ala His Arg Asp
144          325               330               335
146 Leu Lys Ser Lys Asn Ile Leu Val Lys Lys Asn Gly Gln Cys Cys Ile
147          340               345               350
149 Ala Asp Leu Gly Leu Ala Val Met His Ser Gln Ser Thr Asn Gln Leu
150          355               360               365
152 Asp Val Gly Asn Asn Pro Arg Val Gly Thr Lys Arg Tyr Met Ala Pro
153      370               375               380
155 Glu Val Leu Asp Glu Thr Ile Gln Val Asp Cys Phe Asp Ser Tyr Lys
156 385              390               395               400
158 Arg Val Asp Ile Trp Ala Phe Gly Leu Val Leu Trp Glu Val Ala Arg
159          405               410               415
161 Arg Met Val Ser Asn Gly Ile Val Glu Asp Tyr Lys Pro Pro Phe Tyr
162          420               425               430
164 Asp Val Val Pro Asn Asp Pro Ser Phe Glu Asp Met Arg Lys Val Val
165          435               440               445
167 Cys Val Asp Gln Gln Arg Pro Asn Ile Pro Asn Arg Trp Phe Ser Asp
168      450               455               460
170 Pro Thr Leu Thr Ser Leu Ala Lys Leu Met Lys Glu Cys Trp Tyr Gln
171 465              470               475               480
173 Asn Pro Ser Ala Arg Leu Thr Ala Leu Arg Ile Lys Lys Thr Leu Thr
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188 gagcgagccc ctccccggct ccagcccggt ccggggccgc gccggacccc agcccgccgt 180

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191 aggaaaggcc ttctgatgct gctgatggcc ttggtgaccc agggagaccc tgtgaagccg 360
192 tctcggggcc cgctggtgac ctgcacgtgt gagagcccac attgcaaggg gcctacctgc 420
193 cggggggcct ggtgcacagt agtgctggtg cgggaggagg ggaggcaccc ccaggaacat 480
194 cggggctgcg ggaacttgca cagggagctc tgcagggggc gccccaccga gttcgtcaac 540
195 cactactgct gcgacagcca cctctgcaac cacaacgtgt ccctggtgct ggaggccacc 600
196 caacctcctt cggagcagcc gggaacagat ggccagctgg ccctgatcct gggccccgtg 660
197 ctggccttgc tggccctggt ggccctgggt gtcctgggcc tgtggcatgt ccgacggagg 720
198 caggagaagc agcgtggcct gcacagcgag ctgggagagt ccagtctcat cctgaaagca 780
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204 cgcaactcga gcacgcagct gtggctcatc acgcactacc acgagcacgg ctccctctac 1140
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231              20                  25                  30
233 Thr Cys Thr Cys Glu Ser Pro His Cys Lys Gly Pro Thr Cys Arg Gly
234              35                  40                  45
236 Ala Trp Cys Thr Val Val Leu Val Arg Glu Glu Gly Arg His Pro Gln
237        50                  55                  60
239 Glu His Arg Gly Cys Gly Asn Leu His Arg Glu Leu Cys Arg Gly Arg
240 65                  70                  75                  80
242 Pro Thr Glu Phe Val Asn His Tyr Cys Cys Asp Ser His Leu Cys Asn
243                  85                  90                  95
245 His Asn Val Ser Leu Val Leu Glu Ala Thr Gln Pro Pro Ser Glu Gln
246             100                 105                 110
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251 Leu Leu Ala Leu Val Ala Leu Gly Val Leu Gly Leu Trp His Val Arg
252     130                 135                 140
254 Arg Arg Gln Glu Lys Gln Arg Gly Leu His Ser Glu Leu Gly Glu Ser
255 145                 150                 155                 160
257 Ser Leu Ile Leu Lys Ala Ser Glu Gln Gly Asp Thr Met Leu Gly Asp
258                 165                 170                 175
260 Leu Leu Asp Ser Asp Cys Thr Thr Gly Ser Gly Ser Gly Leu Pro Phe
261             180                 185                 190
263 Leu Val Gln Arg Thr Val Ala Arg Gln Val Ala Leu Val Glu Cys Val
264         195                 200                 205
266 Gly Lys Gly Arg Tyr Gly Glu Val Trp Arg Gly Leu Trp His Gly Glu
267     210                 215                 220
269 Ser Val Ala Val Lys Ile Phe Ser Ser Arg Asp Glu Gln Ser Trp Phe
270 225                 230                 235                 240
272 Arg Glu Thr Glu Ile Tyr Asn Thr Val Leu Leu Arg His Asp Asn Ile
273                 245                 250                 255
275 Leu Gly Phe Ile Ala Ser Asp Met Thr Ser Arg Asn Ser Ser Thr Gln
276             260                 265                 270
278 Leu Trp Leu Ile Thr His Tyr His Glu His Gly Ser Leu Tyr Asp Phe
279         275                 280                 285
281 Leu Gln Arg Gln Thr Leu Glu Pro His Leu Ala Leu Arg Leu Ala Val
282     290                 295                 300
284 Ser Ala Ala Cys Gly Leu Ala His Leu His Val Glu Ile Phe Gly Thr
285 305             310                 315                 320
287 Gln Gly Lys Pro Ala Ile Ala His Arg Asp Phe Lys Ser Arg Asn Val
288             325                 330                 335
290 Leu Val Lys Ser Asn Leu Gln Cys Cys Ile Ala Asp Leu Gly Leu Ala
291             340                 345                 350
293 Val Met His Ser Gln Gly Ser Asp Tyr Leu Asp Ile Gly Asn Asn Pro
294         355                 360                 365
296 Arg Val Gly Thr Lys Arg Tyr Met Ala Pro Glu Val Leu Asp Glu Gln
297     370                 375                 380
299 Ile Arg Thr Asp Cys Phe Glu Ser Tyr Lys Trp Thr Asp Ile Trp Ala
300 385                 390                 395                 400
302 Phe Gly Leu Val Leu Trp Glu Ile Ala Arg Arg Thr Ile Val Asn Gly
303             405                 410                 415
305 Ile Val Glu Asp Tyr Arg Pro Pro Phe Tyr Asp Val Val Pro Asn Asp
306             420                 425                 430
308 Pro Ser Phe Glu Asp Met Lys Lys Val Val Cys Val Asp Gln Gln Thr
309             435                 440                 445
311 Pro Thr Ile Pro Asn Arg Leu Ala Ala Asp Pro Val Leu Ser Gly Leu
312     450                 455                 460
314 Ala Gln Met Met Arg Glu Cys Trp Tyr Pro Asn Pro Ser Ala Arg Leu
315 465                 470                 475                 480
317 Thr Ala Leu Arg Ile Lys Lys Thr Leu Gln Lys Ile Ser Asn Ser Pro
318             485                 490                 495
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VERIFICATION SUMMARY   DATE: 09/17/2002
PATENT APPLICATION: US/10/005,228   TIME: 13:30:42

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